

Appendix B. SAR and PD Plots of SAR Measurement

The SAR and Power Density plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination are shown as follows.

P01 WLAN2.4G_802.11b_Bottom Side_5mm_Ch11_Ant 0+1

DUT: BARR-WTW-P21030485

Communication System: UID 10012 - CAB, IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps);

Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: H19T27N1_0707 Medium parameters used: $f = 2462$ MHz; $\sigma = 1.886$ S/m; $\epsilon_r = 38.682$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C ; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7555; ConvF(7.59, 7.59, 7.59) @ 2462 MHz; Calibrated: 2020/09/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1589; Calibrated: 2020/09/15
- Phantom: Twin-ELI Phantom_2118; Type: QD OVA 004 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x221x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 1.27 W/kg

Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.33 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 1.89 W/kg

SAR(1 g) = 0.720 W/kg; SAR(10 g) = 0.309 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 6.7 mm

Ratio of SAR at M2 to SAR at M1 = 40.5%

Maximum value of SAR (measured) = 1.37 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.33 V/m; Power Drift = -0.09 dB

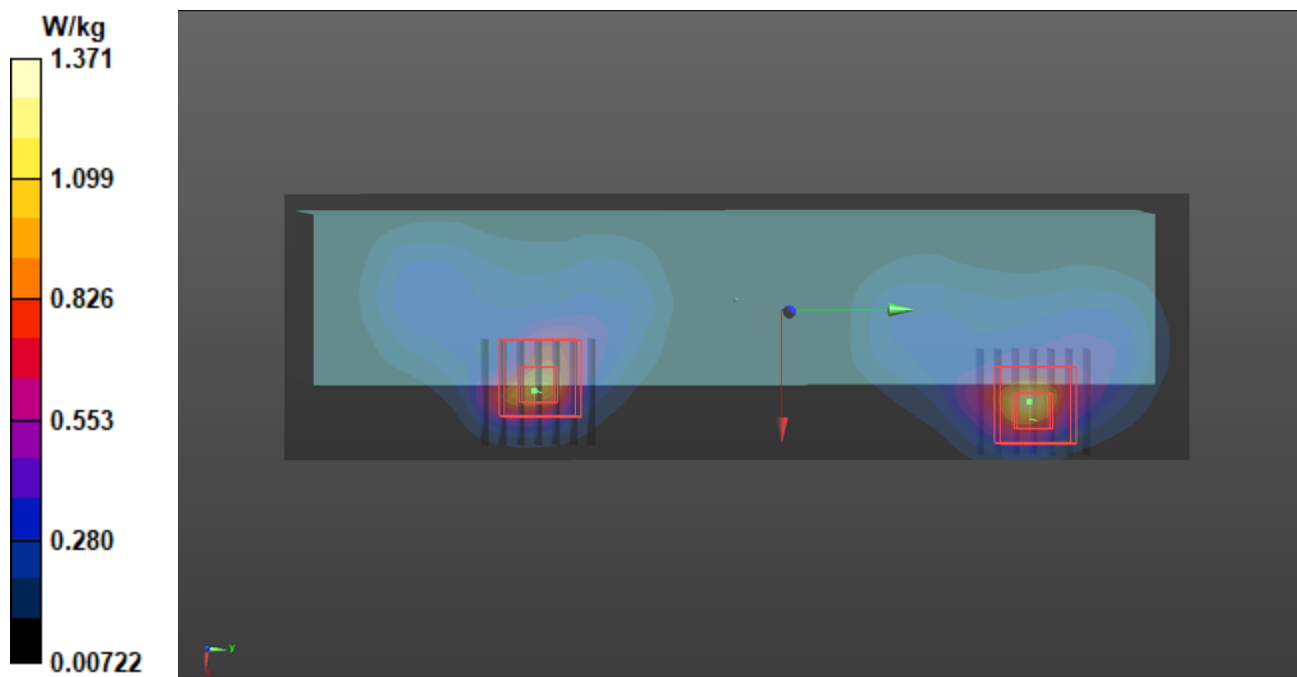
Peak SAR (extrapolated) = 1.70 W/kg

SAR(1 g) = 0.642 W/kg; SAR(10 g) = 0.281 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 7 mm

Ratio of SAR at M2 to SAR at M1 = 39.9%

Maximum value of SAR (measured) = 1.23 W/kg



P02 WLAN5.3G_802.11ac VHT160_Bottom Side_5mm_Ch50_Ant 1**DUT: BARR-WTW-P21030485**

Communication System: UID 10554 - AAD, IEEE 802.11ac WiFi (160MHz, MCS0); Frequency: 5250 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0708 Medium parameters used: $f = 5250$ MHz; $\sigma = 4.878$ S/m; $\epsilon_r = 37.061$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7555; ConvF(5.41, 5.41, 5.41) @ 5250 MHz; Calibrated: 2020/09/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1589; Calibrated: 2020/09/15
- Phantom: Twin-ELI Phantom_2118; Type: QD OVA 004 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x261x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 1.85 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 20.04 V/m; Power Drift = 0.03 dB

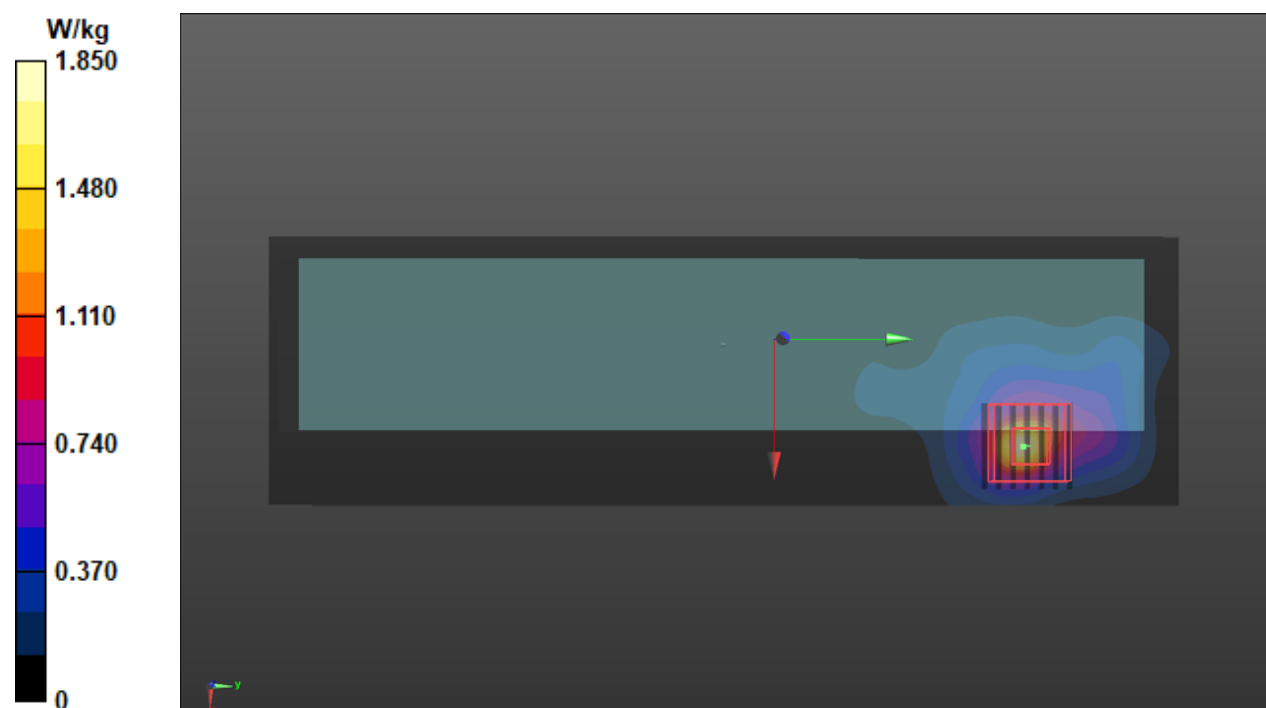
Peak SAR (extrapolated) = 3.00 W/kg

SAR(1 g) = 0.715 W/kg; SAR(10 g) = 0.263 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 61.1%

Maximum value of SAR (measured) = 1.64 W/kg



P03 WLAN5.6G_802.11ac VHT160_Bottom Side_5mm_Ch114_Ant 1**DUT: BARR-WTW-P21030485**

Communication System: UID 10554 - AAD, IEEE 802.11ac WiFi (160MHz, MCS0); Frequency: 5570 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0707 Medium parameters used (interpolated): $f = 5570$ MHz; $\sigma = 4.872$ S/m; $\epsilon_r = 34.742$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7555; ConvF(4.8, 4.8, 4.8) @ 5570 MHz; Calibrated: 2020/09/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1589; Calibrated: 2020/09/15
- Phantom: Twin-ELI Phantom_2118; Type: QD OVA 004 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x261x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.99 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 20.63 V/m; Power Drift = 0.03 dB

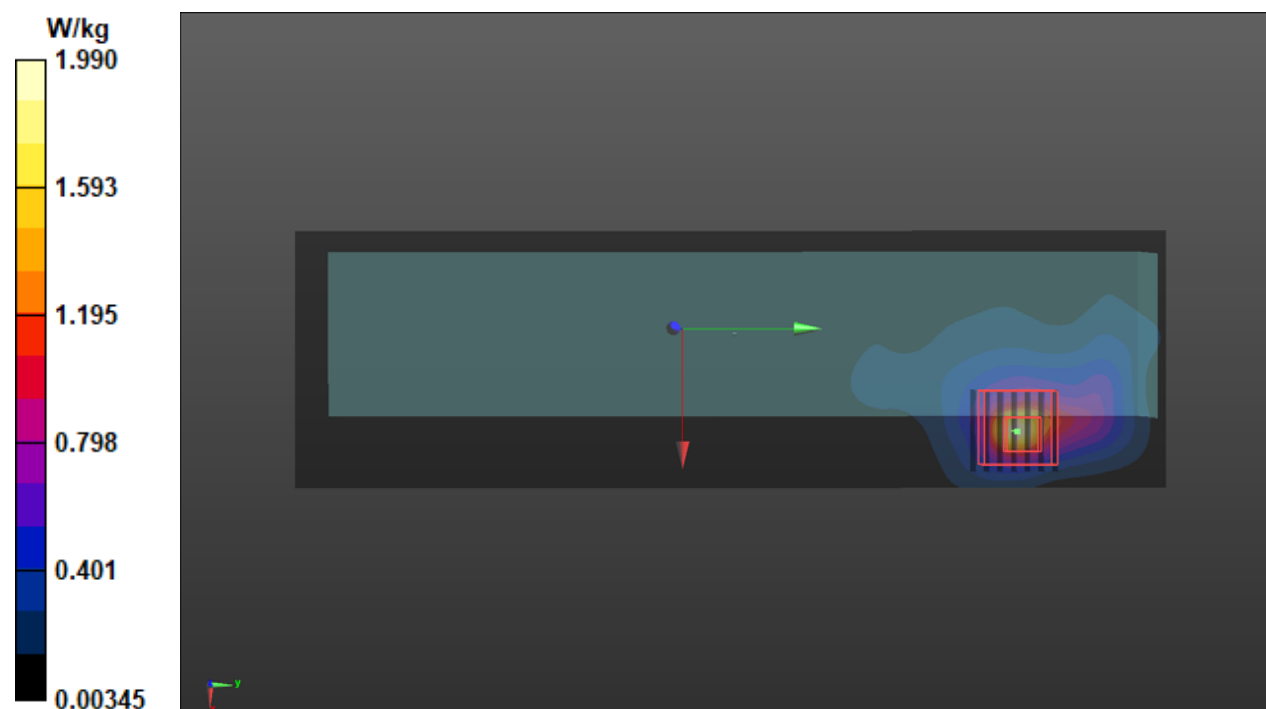
Peak SAR (extrapolated) = 3.57 W/kg

SAR(1 g) = 0.715 W/kg; SAR(10 g) = 0.243 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 57.3%

Maximum value of SAR (measured) = 1.75 W/kg



P04 WLAN5.8G_802.11ac VHT80_Bottom Side_5mm_Ch155_Ant 1**DUT: BARR-WTW-P21030485**

Communication System: UID 10544 - AAC, IEEE 802.11ac WiFi (80MHz, MCS0); Frequency: 5775 MHz; Duty Cycle: 1:1

Medium: H34T60N1_0707 Medium parameters used: $f = 5775$ MHz; $\sigma = 5.067$ S/m; $\epsilon_r = 34.493$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.7 °C; Liquid Temperature : 23.3 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN7555; ConvF(5, 5, 5) @ 5775 MHz; Calibrated: 2020/09/28
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1589; Calibrated: 2020/09/15
- Phantom: Twin-ELI Phantom_2118; Type: QD OVA 004 AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (81x261x1): Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 1.82 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 20.05 V/m; Power Drift = -0.08 dB

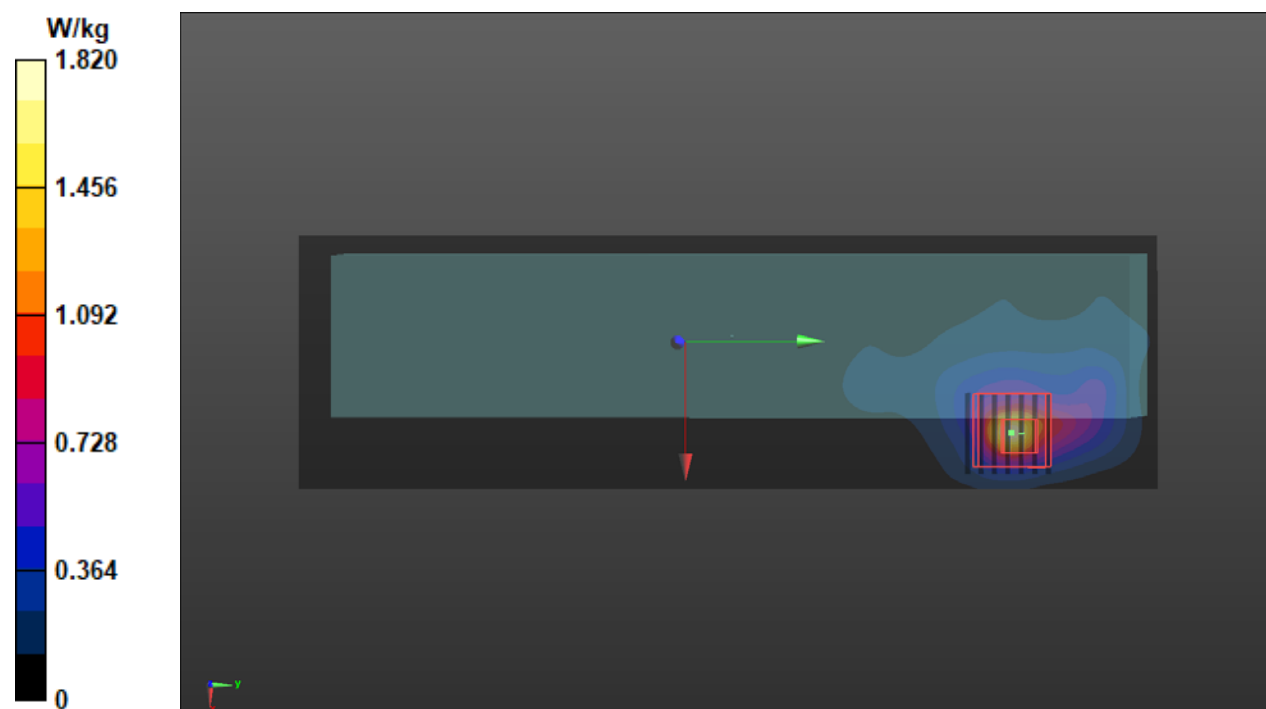
Peak SAR (extrapolated) = 3.76 W/kg

SAR(1 g) = 0.707 W/kg; SAR(10 g) = 0.235 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 57.3%

Maximum value of SAR (measured) = 1.75 W/kg



P05 BT_BDR_Bottom Side_5mm_Ch0_Ant 1**DUT: BARR-WTW-P21030485**

Communication System: UID 10032 - CAA, IEEE 802.15.1 Bluetooth (GFSK, DH5); Frequency: 2402 MHz; Duty Cycle: 1:1.31

Medium: H19T27N1_0415 Medium parameters used (interpolated): $f = 2402$ MHz; $\sigma = 1.835$ S/m; $\epsilon_r = 38.521$; $\rho = 1000$ kg/m³

Ambient Temperature : 23.5 °C ; Liquid Temperature : 23.2 °C

DASY5 Configuration:

- Probe: EX3DV4 - SN3650; ConvF(7.77, 7.77, 7.77) @ 2402 MHz; Calibrated: 2021/03/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1356; Calibrated: 2020/05/19
- Phantom: ELI Phantom_1245; Type: QDOVA002AA;
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Area Scan (71x101x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm

Maximum value of SAR (interpolated) = 0.350 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.32 V/m; Power Drift = -0.12 dB

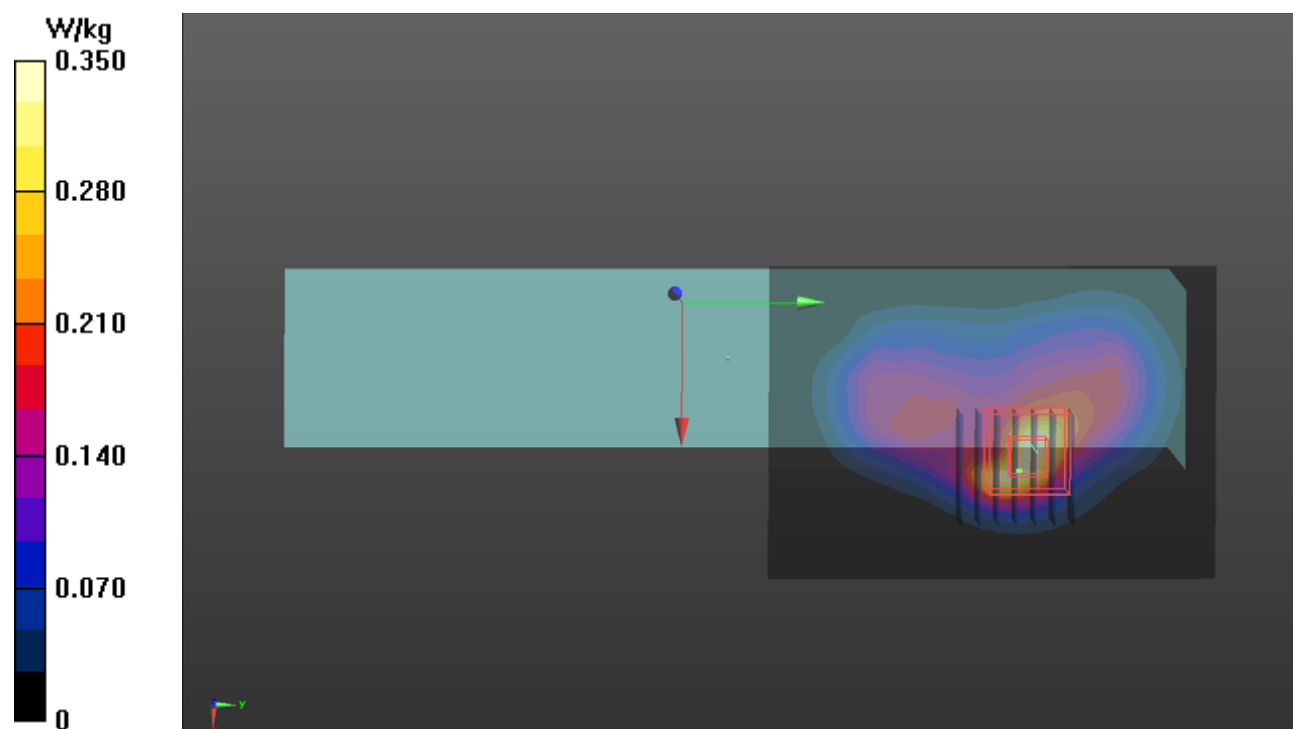
Peak SAR (extrapolated) = 0.471 W/kg

SAR(1 g) = 0.200 W/kg; SAR(10 g) = 0.098 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 8.5 mm

Ratio of SAR at M2 to SAR at M1 = 43.6%

Maximum value of SAR (measured) = 0.361 W/kg



P06 UNII-5_802.11ax HE160_Bottom Side_5mm_Ch79_Ant 0+1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BARR-WTW-P21030485	237.0 x 48.0 x 74.0		Module

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Bottom Side, 5.00	U-NII-5	WLAN, 10743-AAB	6345.0,	5.5	5.89	33.8

Hardware Setup

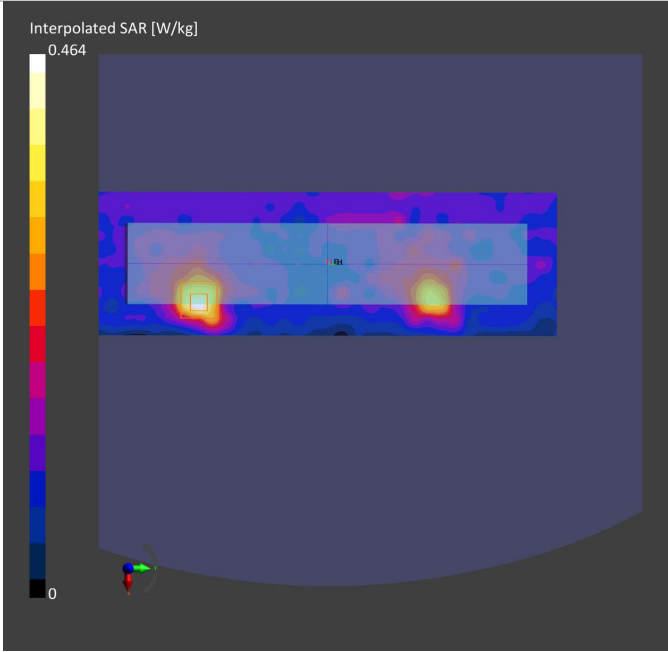
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1245	H50T72N2 , 2021-Jun-02	EX3DV4 - SN3971, 2021-01-27	DAE4 Sn1431, 2021-03-24

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 272.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-02	2021-06-02
psSAR1g [W/Kg]	0.369	0.323
psSAR10g [W/Kg]	0.144	0.128
Power Drift [dB]	0.16	0.13



P07 UNII-6_802.11ax HE160_Bottom Side_5mm_Ch111_Ant 0+1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BARR-WTW-P21030485	237.0 x 48.0 x 74.0		Module

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Bottom Side, 5.00	U-NII-6	WLAN, 10743-AAB	6505.0,	5.5	6.14	33.8

Hardware Setup

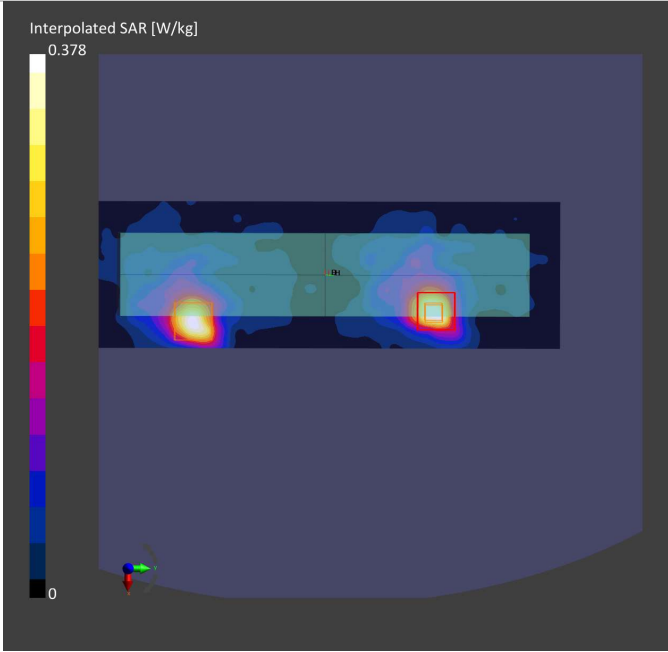
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1245	H50T72N2 , 2021-Jun-02	EX3DV4 - SN3971, 2021-01-27	DAE4 Sn1431, 2021-03-24

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 272.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-02	2021-06-02
psSAR1g [W/Kg]	0.307	0.312
psSAR10g [W/Kg]	0.114	0.110
Power Drift [dB]	0.19	-0.09



P08 UNII-7_802.11ax HE160_Bottom Side_5mm_Ch175_Ant 0

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BARR-WTW-P21030485	237.0 x 48.0 x 74.0		Module

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Bottom Side, 5.00	U-NII-7	WLAN, 10743-AAB	6825.0,	5.5	6.59	33.0

Hardware Setup

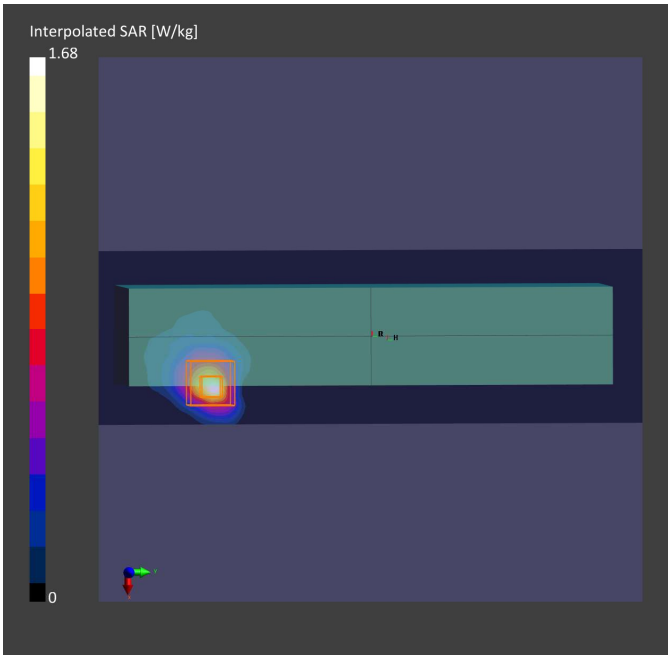
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2105	H50T72N1 , 2021-Jun-02	EX3DV4 - SN7554, 2020-09-28	DAE4 Sn1590, 2020-09-15

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 272.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-02	2021-06-02
psSAR1g [W/Kg]	0.287	0.326
psSAR10g [W/Kg]	0.095	0.108
Power Drift [dB]	-0.01	0.11



P09 UNII-8_802.11ax HE160_Bottom Side_5mm_Ch207_Ant 1

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BARR-WTW-P21030485	237.0 x 48.0 x 74.0		Module

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Bottom Side, 5.00	U-NII-8	WLAN, 10743-AAB	6985.0,	5.5	6.58	32.9

Hardware Setup

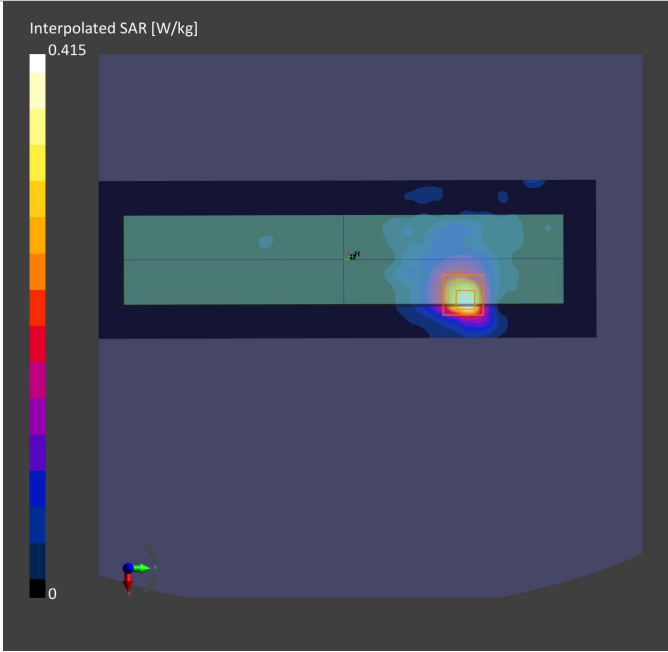
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1245	H50T72N2 , 2021-Jun-02	EX3DV4 - SN3971, 2021-01-27	DAE4 Sn1431, 2021-03-24

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 272.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-06-02	2021-06-02
psSAR1g [W/Kg]	0.337	0.361
psSAR10g [W/Kg]	0.117	0.119
Power Drift [dB]	0.15	-0.15



Power Density Plot No.:

P09 WLAN UNII-8_802.11ax HE160_Bottom Side_5mm_Ch207_Ant 1

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	IMEI	DUT Type
WTW-P21030485	238.0 x 74.0 x 48.0		Module

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5GAir	Bottom Side 5.00	U-NII-8	WLAN 10743	6985.0 207	1.0

Hardware Setup

Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave	Air---	EUmmWV4 - SN9454_F1-78GHz, 2020-09-24	DAE4 Sn1590, 2020-09-15

Scan Setup

	5G Scan
Grid Extents [mm]	120.0 x 120.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	5.0

Measurement Results

	5G Scan
Date	2021-06-11
Avg. Area [cm²]	4.00
pStotavg[W/m²]	2.33
pSnavg [W/m²]	1.97
E_peak [V/m]	46.8
Power Drift [dB]	-0.01

